Smokeless Powder Muzzleloading

By Randy Wakeman

In the vast majority of states in this country, nitrocellulose based smokeless powder is a legal propellant in muzzleloaders designed for its use. Any state that investigates the matter honestly and forthrightly will quickly come to the realization that if they allow Pyrodex, American Pioneer, Triple Se7en, or flammable pellets or sticks they are already allowing smokeless propellants as classified by the United States Department of Transportation (Class 1.3 hazardous materials).

Only marketing tactics can suggest that Pyrodex, Triple Se7en, American Pioneer, and other synthetic replacements are something OTHER than smokeless powder. Pyrodex was long ago marketed as a "smokeless propellant for muzzleloaders" right on every bottle. It was then, and it is now.

Additionally, the toxicity of Pyrodex is also documented. Part of the raw materials that goes into its manufacture are the bags of "dicyanamide". The large bright red warning labels on all sides of the bags say "avoid heat or flame, when heated to decomposition emits highly toxic fumes of cyanide."

The latest trend in muzzleloading marketing is "sulfurless black powder replacements." Those include BlackMag3, American Pioneer, and Hodgdon's Triple Se7en. They have absolutely nothing chemically in common with black powder, they are not at all similar in performance, and they are also not equivalent in weight.

They are provably, clearly, not black powder equivalents chemically, by velocity, weight, residue, or by any rational basis. All are used as reloading powders for modern cartridges and shotshells in addition to muzzleloading use. Their "fuel base" can be ascorbic acid, gluconic acid salts, and a variety of additives to burn hotter, cleaner, and more efficiently than black powder.

It is bizarre to suggest that these, the most recent propellants used in muzzleloading are in any way "primitive" compared to nitrocellulose based Accurate Arms 5744 that has been around for a lot longer. 5744 is cleaner and safer to handle, use, and store than any of these other sulfurless propellants.

Obviously, you need to load your muzzleloader in accordance with the respective gun manufacturer's rules, and that is true with any propellant. To think that gluconic acid salts could possibly be given legislative preference over a recommended nitrocellulose based propellant seems like a sick joke of some sort. Maybe some one had a bad experience with Ping-Pong balls (nitrocellulose) or film (nitrocellulose) as a child? Muzzleloading is more popular than ever, and there is only one reason these silly attitudes, while dwindling, still persist.

If anyone has any doubt about the purpose of Triple Seven, here's a direct quote from the Hodgdon web site that makes it quite clear:

"Q: If I use equal volumes of black powder and Triple Seven, will there be a difference in performance?"

"A: Triple Seven is a high-energy propellant designed to provide the highest velocity possible out of modern muzzleloading rifles. Triple Seven will provide the shooter with higher velocity, flatter

trajectory and more down range energy when compared to all other muzzleloading propellants. See Loading Notes for more information."

That should end the "black powder equivalent theory." In the words of Hodgdon Powder Company: "*highest velocity possible*" . . . when compared to *all other muzzleloading propellants*." It is right on the Hodgdon Triple Se7en "FAQ" page.

Folks might get a little confused at the reports that "Triple Se7en is hopped up with a little nitro." Well, that is the case according to the United State's most respected forensic lab dealing with bomb residue identification. The lab analyzed Triple Se7en, and found what other chemists already had suspected: sodium dinitrobenzoate sulfonate.

To ship sodium dinitrobenzoate sulfonate as a dry powder you must ship it as an explosive. It is sensitive to impact and friction. Made into a paste with 20% water, it can then ship as a flammable solid--see the D.O.T. for details. It is well documented that the "dinitros" are used in low explosives while "trinitros" are employed in high explosives. Likely you have already guessed the most well known of these, TNT, or trinitrotoluene.

It is all money and marketing, for a substance in a bottle labeled as a "muzzleloading propellant" can bring $25 or $30 a pound. That is well more than twice what Accurate Arms 5744 (and similar propellants) can be had for, and you get double the amount of shots from a common propellant like 5744.

Here's an eye-opener: Triple Se7en pellets can cost upwards of $25 per box of 100 pellets. For the popular 3 pellet loads, that is seventy-five cents (or more) per shot. You can find Accurate Arms 5744 for $17 a pound. That is good for over 160 shots, less than eleven cents a shot.

This is one sweet deal for pellet sellers. They can get 700% more cash out of your pocket with every shot in a special "muzzleloading propellant" labeled box. If you guessing that pellets are cheap to make, you are guessing correctly. And, if you are guessing that most of that extra seventy cents a shot that it costs you is spelled "profit," you are on the right track again.

That prints a lot of "black powder replacement" or "muzzleloading propellant" labels. It is good marketing, it is smart business, it is the American way. But if you like to shoot, if you enjoy practice and you shoot a lot, well, pellet burning can empty your wallet faster than a Park Avenue hooker.

Poachers don't buy tags, they don't use "recommended" equipment, and they aren't all that concerned about seasons or safety. Buicks take more deer than muzzleloading hunters do in my area. The piles of deer taken for crop damage reasons across this country and the insurance companies that beg for more deer to be killed because of all the deer/car collisions are just daily reality in many places.

It doesn't take savvy Game Departments long to understand that there are better things to do than worry about whether a tax-paying hunter is burning a pile of synthetic pellets to fill his tag, or shoots cleaner, safer, more economical nitrocellulose based propellants to accomplish the same goal, at the same ranges. I'm proud that my home state of Illinois has clearly, concisely changed their regulations this year, effective 6/24/2005 to read:

"3) Only black powder or a 'black powder substitute' such as Pyrodex may be used. Modern smokeless powders (nitrocellulose-based) are an approved black powder substitute only in muzzleloading firearms that are specifically designed for their use."

It was only a year and a half or so ago that neighboring state Indiana had a public discussion of moving to outlaw smokeless powder. The results were recorded at http://www.in.gov/dnr/fishwild/about/deercomment.pdf

The peculiar motivation for that little stunt would read a bit like a novel, but it was shot down in a

hurry. The URL is placed here so those who wish to can read the document in its entirety, and in context. I find Indiana particularly significant, as that is where the modern muzzleloading era in the United States was born, in 1939. One of the more reasoned comments from this little discussion is quoted here:

"I am writing regarding the proposed ban on the use of smokeless powder muzzleloaders for deer hunting here in Indiana. I am a graduate of Purdue, an honors graduate of the Indiana Law Enforcement Academy, a Lieutenant on the Madison County Sheriff's Dept., a certified firearms instructor, and a SWAT member/trainer. I am telling you this because I want you to know that I am educated and very familiar with firearms. I have also been hunting since I was 13 years old, about 22 years. I feel that I am qualified to speak about this issue because I have hunted deer with a muzzleloader for years, and a smokeless muzzleloader since 2000. I also am in a profession where I have had the opportunity to investigate hunting 'accidents'."

"My smokeless muzzleloader, with the load I hunt with is 40 grains of 5744 with a 250 grain bullet that kills deer very swiftly, and humanely. My best friend shoots 150 grains of Triple 7 and the same bullet. Both of our muzzleloaders are sighted in up to 150 yards. Could mine shoot 200, probably. Could his shoot 200, probably. I hunt strictly with my muzzleloader because I value the accuracy and the ability to harvest a deer humanely and limit the number of wounded animals, but what if I hunted with a legal handgun. Let's say I'm shooting a 7mm Mag. in a bull barrel pistol on November 15, 2003, when thousands and thousands of hunters are in the Indiana woods. It is perfectly legal to shoot this pistol utilizing a center-fire rifle cartridge and there is no talk of banning it, that I can see, and no reason to either. I am sure the IDNR would not allow the weapon to be used, especially during the most heavily hunted portion of the Indiana deer season if it was dangerous or had excessive range."

"But if the proposed ban becomes the rule, I will be unable to hunt with my smokeless rifle, the safest production muzzleloader made. Many of the smokeless powder weapons are only used by hunters during the muzzleloader season, when relatively few hunters are in the woods, because they use an auto-loading shotgun or handgun during firearms season."

"Which brings me to my next point, excess projectile range contributes to nearly no hunting accidents. I have never investigated a hunting accident that occurred because of excess range. Yes, hunting accidents occur, but they are usually from negligent handling of a firearm. The victim is usually the hunter himself dropping a weapon or pulling a weapon into a tree when it fires due to negligence. Another frequent type of hunting accident is when a hunter mistakenly shoots another hunter moving through the woods. These accidents could be long range, but usually aren't. As you probably know, an archer shot another archer in the leg here in Indiana about three weeks ago."

"One thing causes accidents, and it's not range of projectile, it is NEGLIGENCE. I enjoy muzzleloading, modern muzzleloading. I have nothing against primitive type muzzleloaders, I love to go to Friendship and watch the competitors, but I don't have knowledge to shoot those rifles, and quite frankly, don't want to clean up black powder rifles, that is the main reason I went to smokeless. The sport of muzzleloading is evolving rapidly. To single out smokeless powder when 'black powder substitutes' as they are loosely referred to are competing directly with smokeless and can perform as well, or nearly as well. Five years ago there was Pyrodex, now there are many black powder substitutes legal in Indiana. Who decides which of these substitutes are legal? If the industry calls them a black powder substitute is that good enough? There will be more of these substitutes to come, will they all be legal as long as they smoke, even when they outperform smokeless?"

All of these forms of gunpowder burn, producing a subsonic deflagration wave rather than the supersonic detonation wave that high explosives can produce. This reduces peak pressures in a gun, but makes it less useful for mining or blasting applications. However, black powder was, for a few centuries, the only blasting agent available.

Historically gunpowder has meant black powder, but modern references mean smokeless powder when referring to small arms propellants, as it is so common. Sulfurless black powder substitutes, sadly, are typically defined only by those who sell the stuff. The huge advantage of propellant such as

Accurate Arms has is that it is non-hygroscopic and non-corrosive. Black powder fouling exhibits both of these poor properties.

There really isn't much mysterious about nitrocellulose powder muzzleloading in a rifle designed for it, whether you are shooting a Savage 10ML-II, an SMI model, or a New Ultra Light Arms frontloader. The reason most people choose the smokeless is that is doesn't stink, it isn't messy, it is economical, it does not corrode your equipment, you can see what you are shooting at, and you don't have to clean your gun every time you shoot it. It is just plain more fun.

Postscript:

For the by now hoary modern vs. traditional debate, Tony Knight summed things up well, in a recent interview published in the American Rifleman:

"I respect someone's choice to stay traditional, but the average hunter wants to use the most modern equipment that's easy to use. He does not have a lot of time to practice, so I think we are just following the path that the compound bow set some 30 years ago. I think we all ought to get together. I respect the man who wants to be traditional, but he should also respect me for wanting to be modern. What sets us muzzleloaders apart is the fact that we have one shot and we are handloaders in the field. We are handicapped with one shot when it comes to comparing us with general firearms. Even an archer can shoot several arrows before we can get a second shot ready to go. It's for that reason we have a separate season. Bless the hearts of those traditionalists because they started the (special muzzleloading) seasons, but now it's expanded, and to do this you have to welcome everyone. We are following the same course that compound bows did. You would be hard-pressed to find a bow hunting household in this nation that does not have a compound bow in it. I think the same thing for muzzleloading, if we want it to grow, we have to accept everything."

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